Songwriter™

By Learningways Inc. Make music! Start enjoying and composing. For the young and the young at heart. Great fun... and builds musical knowledge as well. In 15 minutes, be playing your own tune... on the computer or through the home stereo.

For ages 5 to adult

Songwriter™

Created by Samuel Wantman and Art Bardige, Learningways, Inc.

Programmed by Samuel Wantman

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CREDITS

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A NOTE ON LEARNING MUSIC

Songwriter is designed for fun and learning. It can be used by children and adults alike, by novices or experts. It is an easy to use yet powerful tool for anyone who wants to create music.

We did not use standard musical notation in *Songwriter* for two reasons. First, standard notation is difficult to understand and requires the user to already know a good deal about music. Second, musical notation frequently does not look the way it sounds. Very short notes are often several times larger than very long notes. Notes that appear equally spaced on the staff are often at different intervals on the scale.

Writing songs is a creative process. With *Songwriter* you can put notes together to form songs that sound just the way you want them to. Experiment, try out different combinations of sounds. Write a song and change it. Put one melody together with another. Try out a different musical scale. Creativity is a messy process. Relax and enjoy it, and eventually songs will begin to take shape almost by themselves.

As you are learning *Songwriter*, you will be learning much of the standard vocabulary of music—intervals, scales, rhythm, etc. If you need to refresh your memory at any point concerning a particular musical concept or term, you can turn to the glossary at the end of this manual.

We know you are going to enjoy *Songwriter*, but we would appreciate any comments or suggestions you have regarding it. You can send your comments or queries to Scarborough Systems, Inc., 25 North Broadway, Tarrytown, NY 10591, or call us at (914) 332-4545.

Thank you.

CHAPTER I. What *Songwriter* Can Do

Songwriter's screen looks a little like a player piano, but with *Songwriter* you can do much more than just play a song already punched on a paper roll.

Songwriter has many features not even mentioned here. For example, you can design your own musical scales using *Songwriter*.

Songwriter has been called a word processor for music. You can compose songs, edit songs, save songs you write on a disk, or listen to songs you or someone else has written. *Songwriter*'s commands make it easy to write music. Each time you wish you could do something with *Songwriter*, check it out. You probably can! For example, you can easily go the beginning or end of your song. You can add songs together. You can even change keys.

Sound is produced differently in different computers. The Commodore computers have very powerful built-in sound generators that *Songwriter* takes advantage of by allowing you to "shape" the music as it's playing. For the Apple II family of computers, *Songwriter* has to do all of the work in generating the sound. But with the Apple version of *Songwriter*, you can add music to your own programs written in BASIC.

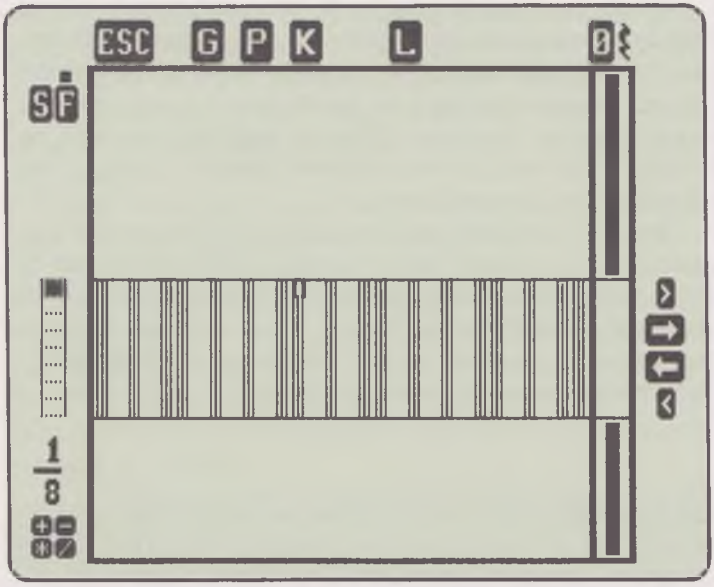
Almost all of the computers that *Songwriter* runs on allow you to channel the sound out of the computer to a separate speaker. In your box you will find the cable to connect *Songwriter* to your stereo. Instructions for making this connection are in your machine-specific guide.

Songwriter requires only one disk drive and a TV or monitor. A color TV or monitor will add to your enjoyment. Some computers allow you to use a joystick with *Songwriter* and some allow you to print out the notes of your song. Once again, check your machine-specific guide to see what your computer can do.

To start you must put the *Songwriter* disk into your disk drive, close the door, and "boot up." The boot-up proce-

dure for each type of computer is different, so check your machine-specific guide now for details.

Songwriter is ready to use right after the titles come on. If you do not see this screen:



Songwriter's opening screen

then check to see if everything is turned on, if all your cables are properly connected, and if your *Songwriter* disk is properly seated in the disk drive. Then try the boot-up procedure again.

CHAPTER II. *Songwriter*—Nuts and Bolts

You are now ready to begin exploring *Songwriter*. In this section, you will be introduced to some of the basic commands and create an actual song, step by step. You will also learn how to store songs on disk, retrieve them at a later time, and edit, or change, them to suit your taste.

When you have finished with this section, you will be able to proceed on your own. But we suggest that you skim through the rest of this manual anyway. *Songwriter* can do some surprising and sophisticated things that we would hate to have you miss. In addition, you will be introduced to most of the important ideas in music as you learn the way *Songwriter* works.

Keep in mind as you work with your *Songwriter* program that you cannot harm the disk or your computer by simply pressing a wrong key. It IS important, though, that you treat the disk gently. Do not touch exposed areas on the disk with your fingers, and always put the disk back in its protective envelope after you take it out of the drive.

NOW LET'S BEGIN

On the edges of the *Songwriter* screen display are pictures, or symbols, of computer keys. Pressing these keys on the computer keyboard will make *Songwriter* do something.

Some of the symbols are letters (**G**, **P**, **K**, **L**, etc.). These stand for words that describe the particular action that will be performed by pressing that key. For example, **P** stands for *Play*. When you press the letter **P** (upper or lower case), the song you have written or currently have in memory will be played. (The symbols disappear while a song is playing.)

Pressing **P** plays your song from the beginning.

The right and left cursor keys move the small white box right and left—"up" and "down"—on the *Songwriter*

scale. (To find out what keys your computer uses to move the cursor around in *Songwriter*, see your machine-specific guide.) Now press the **RETURN** key on your computer. It plays a note on the scale! At each new note you come to, press the **RETURN** key.

Put the note back to its starting location on the scale (check the picture on page 7). Now press the **SPACEBAR**. (This key is not shown on the *Songwriter* screen.)

Move further up the scale and record the note, again using the **SPACEBAR**. Continue until you have recorded eight notes.

Press **P** and play your song. When it finishes, press **P** again. You can play your song as many times as you like.

Now experiment with playing the notes one by one. To do this, press the keys pictured on the top and bottom of the right side of your screen, or check your machine-specific guide to see which keys your computer uses for "scrolling" (moving up and down). Scrolling up plays your song one note at a time. Scrolling down plays it backwards one note at a time.

The **RETURN** key and the **SPACEBAR** are not pictured on the *Songwriter* screen. The **RETURN** key plays a note, the **SPACEBAR** records it.

If your have a version of *Songwriter* that allows you to use a joystick, such as an Atari or a Commodore, you can plug your joystick in and use it to move the note around. Plug your Atari joystick into any game port. Plug your Commodore joystick into Control Port 2. Experiment with it now, moving the note in the scale left and right, up and down.

You may be able to use your joystick to edit songs, too.

Songwriter has a lot in common with the old player pianos. They had a roll of punched paper that fed through a mechanism which "read" the holes and pushed the piano key for that note. Pressing the **SPACEBAR** causes *Songwriter* to "punch a hole" in its electronic "paper" and roll

the paper up the screen. *Songwriter* can both record music and play it back.

The scale across the middle of the *Songwriter* screen looks like a piano keyboard with its pattern of white and black keys. But it is not an exact copy because *Songwriter*'s scale can do many things a piano keyboard cannot, as you will soon see.

EDITING AND ERASING

Play again the little "song" you just wrote, but this time press a key—any key except **F** or **S** —while it is playing. It stops! Now move the note left or right. Record that note by pressing the **SPACEBAR**. You have just added a new note to your song! New notes can be added at any time and at any point in a song.

Pressing **C** resumes the playing of your song.

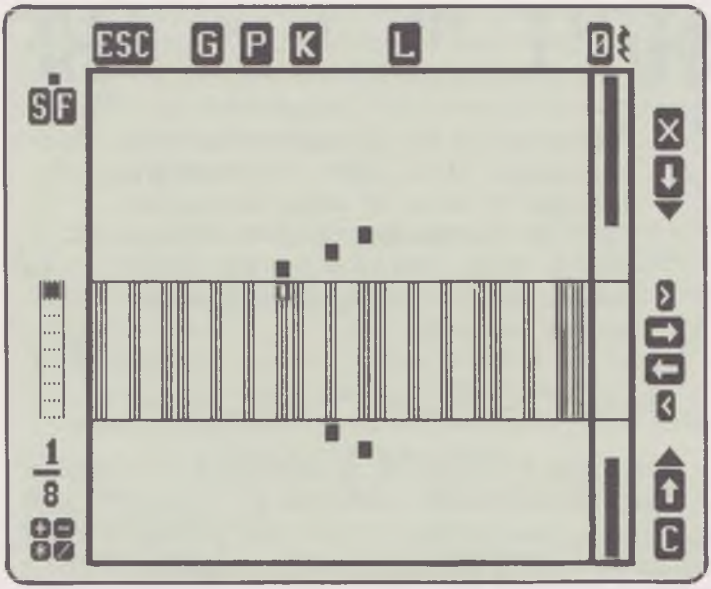
Now press **C** for *Continue*. The song resumes, and the notes continue to scroll up the screen. Play your song over again to hear how it sounds now.

The **X** key will erase the note directly above the scale. Try erasing one or more of your recorded notes. Simply stop the song at any note you wish and press the **X** key.

You can bring back an erased note by pressing the **SPACEBAR**, but this will only work with the *last* erased note. Try it. You will find this *Songwriter* feature very handy when you are trying out different song combinations.

The **X** key erases the note directly above the scale.

You listen to a song by scrolling up or down and pressing **P** for play. When you have found a note you don't like, you "**X**" it out (erase it). Then you move the cursor up or down the scale to find a note you want to add. Finally, you press the **SPACEBAR** to record it and make it part of your song. Listen, erase, change, and record—these are the basic steps you will use again and again in *Songwriter*.



Bringing the erased note back

Every note in music is a combination of two things: its pitch and its length (duration). You have seen how to change the pitch of a note with *Songwriter*. Just move the note up or down the scale. Changing the length of a note is just as easy. Just press a number (1, 2, 3 . . .) key.

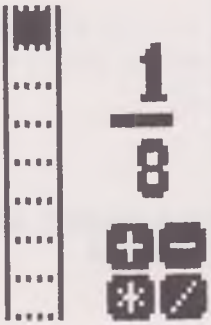
Try it! *Songwriter* shows you the length of the note by changing the actual length of the white box in the scale. You can also see note length as the filled-in area on the "fraction bar" on the left side of the scale and as a numerical fraction below the fraction bar. Pressing a number key changes the numerator (top number) of the fraction.

CHANGING NOTE LENGTH

The operator keys (+ − / *) change note length.

Pitch *refers to the highness or lowness of a sound. On a scale, the tones are arranged in order of rising and falling pitch. In* Songwriter, *and on instruments with keyboards, the high sounds are on the right and the low sounds are on the left.*

Every note in *Songwriter* is represented by a fraction. Changing the note length using the +, −, *, and / keys also changes the fraction. For example, dividing by 2 will change 3/8 to 3/16. Multiplying by 2 will change 3/16 back to 3/8. Adding 1 to 3/8 will change the note length to 4/8. The best way to learn how to alter fractions with *Songwriter* is just to experiment. The next chapter discusses note lengths in more detail.



The fraction bar and note length fraction

WRITING AND SAVING A SONG

Now you are going to write a real song. Erase (using the **X** key) all the notes you've recorded and change the note length to 1/4. (If you are on 1/8, press the * key and then the 2.) Now put the note back to its starting location on the scale (see picture on p. 7).

Do the following:

1. Move up the scale 2 steps (press the right cursor key twice), then record the note by pressing the **SPACEBAR**.
2. Move down the scale 1 step (left cursor key once) and record the note.
3. Move down the scale 1 step and record the note.
4. Move up the scale 1 step and record the note.
5. Move up the scale 1 step and record the note three times (press the **SPACEBAR** three times).
6. Record a rest (press the Ø—zero—key; do not press the **SPACEBAR** here).
7. Move down the scale 1 step and record the note three times.
8. Record a rest.
9. Move up the scale 1 step and record the note.
10. Move up the scale 2 steps and record the note two times.
11. Record a rest.
12. Move down the scale 2 steps and record the note.
13. Move down the scale 1 step and record the note.
14. Move down the scale 1 step and record the note.
15. Move up the scale 1 step and record the note.
16. Move up the scale 1 step and record the note four times.
17. Move down the scale 1 step and record the note two times.

18. Move up the scale 1 step and record the note.
19. Move down the scale 1 step and record the note.
20. Move down the scale 1 step.
21. Make the note length 3/4 (press **3**).
22. Record the note.

Play the song. Does it sound right?

Try "editing" the song by erasing wrong notes and adding new ones. Play it again.

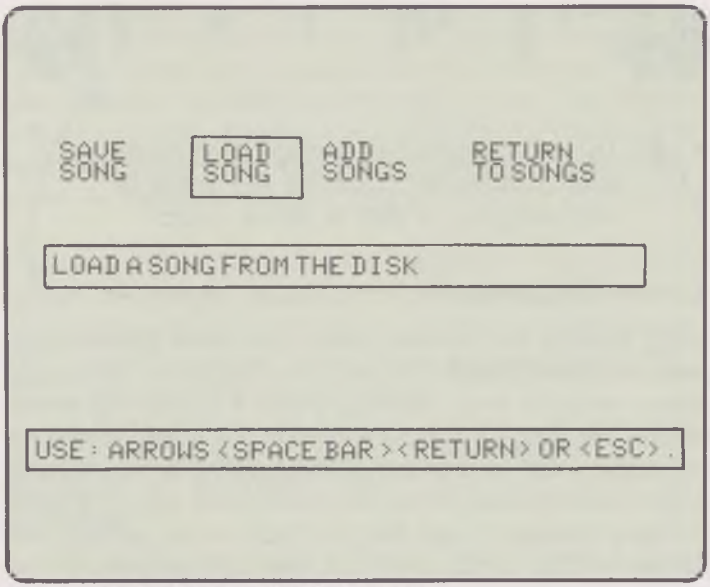
In some ways, "Mary Had a Little Lamb" is the song that started it all. It was the first song that Thomas Edison recorded on his brand-new invention, the phonograph.

You, too, can save your song, but you cannot do it on the *Songwriter* disk, which is write-protected to prevent accidents. If you have a blank disk that has already been initialized (formatted), take out the *Songwriter* disk and replace it with the initialized disk. If you do not have an initialized disk, *Songwriter* can help you make one. Remember, however, that initializing a disk erases everything on that disk. (Note: IBM owners cannot use *Songwriter* to initialize a disk. Refer to your disk-drive manual for instructions.)

To initialize a blank disk, put it in the drive where you had the *Songwriter* disk. (Do *not* turn the computer off.) Press **G** for *Get*. You will see a menu of options displayed. Using the left and right cursor keys or your joystick, you can move through the various options on the menu, until the one you want is highlighted.

Stop when you have come to the MAKE NEW DISK option on the menu.

Now press the **SPACEBAR** or the **RETURN** key. Additional instructions should appear on the screen. Follow these.



Some menu options on the Get screen

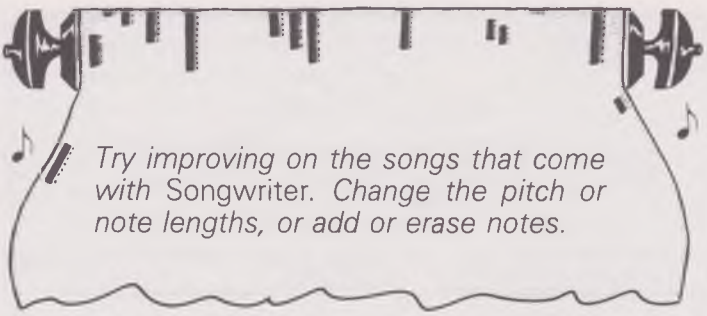
The Get menu gives you lots of options. A menu on a computer gives you a way of both seeing and selecting your choice.

Leaving your initialized disk in the drive, press the **G** key again. The option SAVE SONG should now be highlighted.

Press the **SPACEBAR**, type in the name of your song, and press **RETURN**. You have now saved your song and can retrieve it any time you want using the LOAD SONG option on the menu.

Songwriter has its own song "library." Remove your initialized disk and replace it with the *Songwriter* disk again. Press **G**, but this time choose the LOAD SONG option.

You should now see a "catalog" of all the songs on the *Songwriter* disk. Use the cursor keys or your joystick to



move through the options. When you have chosen one, press the **SPACEBAR**. You will be returned to the music screen with the song showing. Press **P** to play the song. Look at the song as it moves through the scale. Note how the fraction and fraction bar change with changes in note length. Stop the song at any point (using any key but **F** or **S**) to make changes if you like. Go back to the catalog and choose another song. Loading a new song erases the old one.

TURNING SONGWRITER OFF

Before you choose the QUIT PROGRAM option, be sure you've saved your song to disk.

Some versions of *Songwriter* offer the QUIT PROGRAM option on the Get menu. Quitting *Songwriter* this way will allow you to do certain things, such as to delete or lock files or run another program. To utilize the QUIT PROGRAM option, press **G** and highlight it, then press the **SPACEBAR**.

You needn't use the QUIT option to exit *Songwriter*. You can always simply shut the computer off.

If your computer does not give you the QUIT PROGRAM option on the Get menu, simply turn your computer off when you wish to stop working with *Songwriter*, but be sure to first save on disk anything you do not want to lose.

JUMPING AROUND

We've seen how you can move through a song note by note. But you may want to make a change in the beginning of your song and then go quickly to the end to add notes there. Pressing the **ESC** key and then the key that scrolls you backward through your song will jump you back to the beginning. Pressing the **ESC** key followed by the key that moves you forward through a song will leap you to the end.

COMBINING SONGS

Choose the ADD SONGS option on the Get menu to combine songs.

At some point soon, you will undoubtedly find yourself wanting to combine several of your songs together or perhaps repeat a certain melody a number of times in one song. *Songwriter* makes both of these task easy, using the ADD SONGS option in the Get menu.

First find where in the song you want to add the new part. Press the G key and move to ADD SONGS. Press the **SPACEBAR** (or **RETURN**). Pick a song and press the **SPACEBAR**.

ADD SONGS is different from LOAD. Picking a song does not return you to the music screen or erase the song that was there. You can go back by pressing **ESC**.

You can use this feature of *Songwriter* to cut down on repetitive work or experiment with lots of different combinations of melodies. Or, you can work on a song in segments, then later combine them all into one large piece. With *Songwriter*, you can add as many songs together as you want until you fill up the memory.

Songwriter comes with three short song segments called A, B, and C. Try making songs by combining the segments in different ways. Also try adding different melodies at the beginning, middle, and end of a song to become comfortable with the process. You'll find it very useful as you become more adventurous in your musical efforts.

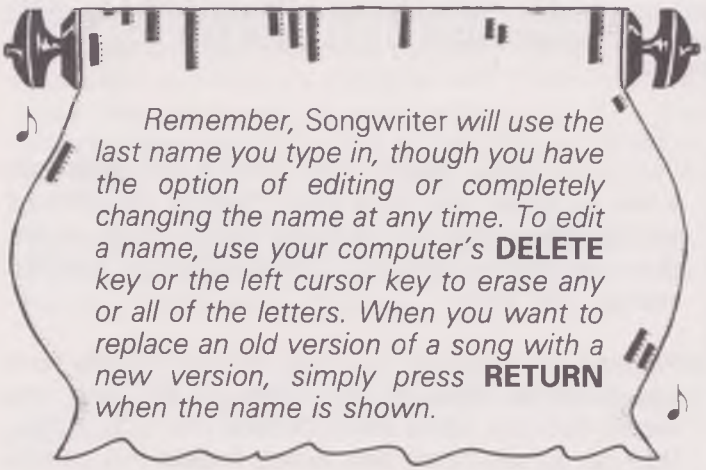
Don't give any two songs the same name.

While we're on the subject of delving into your song files to combine songs, let's talk for a moment about song names. Whenever you save a song on disk, Songwriter *asks you to give it a name.*

You must be careful, though, not to give any two songs the same name. If you do, Songwriter *will erase the first and replace it with the new one. (Of course, this may be your intention and is exactly what you may* want *to do when you have edited or improved an early version of a song.)*

You don't need to give your songs completely different names. For example, suppose you have several versions of one song and aren't sure which one you like best. You might want to save them all. In this case, you could call your songs MY SONG 1, MY SONG 2, and MY SONG 3.

There are certain restrictions to the length of names and what characters you can use. Songwriter *won't let you type a name that it can't use. If you try, you will hear a click.*



Remember, Songwriter *will use the last name you type in, though you have the option of editing or completely changing the name at any time. To edit a name, use your computer's* **DELETE** *key or the left cursor key to erase any or all of the letters. When you want to replace an old version of a song with a new version, simply press* **RETURN** *when the name is shown.*

There is a quick way to erase a song in memory and start a new song without shutting off the machine and rebooting.

Press **G** and choose the START NEW SONG option. When the words PRESS THE **Y** KEY TO ERASE YOUR SONG appear, do so (unless, of course, you wish to save the song you are working on and forgot to do so). *Songwriter* will wipe out all the notes in the computer's internal memory and return you to the original *Songwriter* screen.

You now have all of the basic tools you will need to write your own songs. But *Songwriter* has many other features you can explore, either by reading on in this manual or just by pressing different keys to see what effects they have. Remember, you can't harm *Songwriter* or your computer by experimentation. If you press a key that *Songwriter* does not utilize, nothing will happen—or at worst you

STARTING A NEW SONG

To erase your current song from memory, choose the START NEW SONG option in the Get menu.

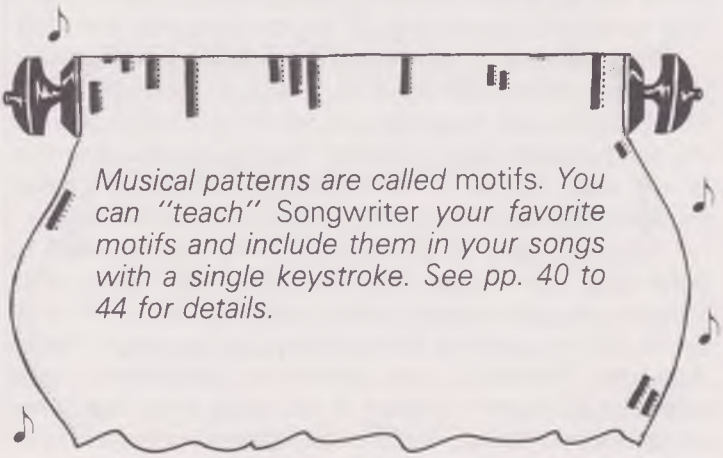
will hear a click, indicating that *Songwriter* can't do what you ask. *SONGWRITER* IS DESIGNED FOR YOU TO EXPLORE.

ACTIVITIES

Be sure to save any tunes you are particularly fond of. You may want to use them later as possible themes for songs.

☞We group words together into phrases and sentences when we speak. We group notes together into phrases and melodies when we compose music. Going up and down the *Songwriter* scale, write phrases that look like zigzags. Play them.

☞Patterns are important in writing music. Play any note and record it. Move up two notes on the scale and record that note. Move down the scale one note, record, then go up two notes and record. Repeat this pattern over and over. Try other patterns, such as up two, down three or up one, down two. Play what you've created. If you like any of these patterns, save them on a disk.



Musical patterns are called motifs. *You can "teach"* Songwriter *your favorite motifs and include them in your songs with a single keystroke. See pp. 40 to 44 for details.*

☞ Pick a note on the scale (any note) and write a phrase that uses that note more than any other. Write a phrase that starts and ends on the same note. Write one that uses the same note as every other note. Play the phrases. Play them backwards to see if they work better that way.

☞ Try reproducing some songs that you particularly like. Can you pick out the important phrases? How accurately can you reproduce the melody?

A BRIEF REVIEW

Let's quickly review what we've learned in this chapter of *Songwriter:*

TO WRITE A SONG:

♪ Press the **RETURN** key to hear a note.
♪ Press the **SPACEBAR** to record a note.
♪ Press **X** to erase a note.
♪ Press the Ø (zero) key to record a rest.
♪ Use the left and right cursor keys or the joystick to go "up" and "down" the scale.
♪ Use the up and down cursor keys to scroll through a song note by note.
♪ Press the number keys (**1** through **9**) and arithmetic keys (**+**, **−**, *****, **/**) to change the length of a note on the scale.
♪ Press **ESC** and the up or down cursor key to go to the beginning or end of your song.

TO PLAY A SONG:

♪ Press **P** to play a song.
♪ Press any key (except **F** or **S**) to stop a song at any point while it is playing.
♪ Press **C** to resume playing a song that has been stopped.

TO SAVE OR LOAD A SONG FROM THE DISK:

♪ Press **G** to obtain menu options to save and load songs, add songs, initialize blank disks, play songs from *Songwriter*'s own library, start a new song, or quit using *Songwriter* (on some computers).
♪ Press **ESC** to get back to your song.

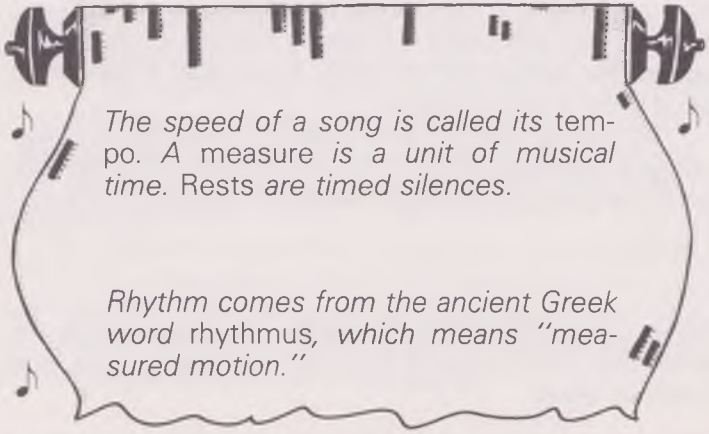
CHAPTER III. Rhythm and Meter

Music rests on two pillars, sound and time. Timing affects music in an amazing number of ways. A song can be played faster or slower—take less time or more time to play. A note can be shorter or longer.

Changing the timing in music changes the way a song sounds and "feels." A song with short notes, like "Bumblebee," feels like it is moving very fast. A song with long notes feels like it is moving very slowly. A song like Bach's "Minuet" can sound very differently to us depending upon whether we play it fast or slow. And we can hear when a single note is too long or too short in any song we are familiar with.

Rhythm is the word we use to describe everything related to time and music. The tempo and the intervals of time between notes and rests and measures and beats make up the rhythm of a song. Most musical pieces have rhythms that have some regularity in them, some sort of pattern that repeats itself.

In music, rhythm refers to the beat and the tempo.



The speed of a song is called its tempo. *A* measure *is a unit of musical time.* Rests *are timed silences.*

Rhythm comes from the ancient Greek word rhythmus, *which means "measured motion."*

TEMPO

Tempo refers to the speed at which music is played.

The **F** and **S** keys are your tempo control keys. Changing tempo means changing the speed at which a piece is played, the speed at which the imaginary piano roll moves up on your screen. The "correct" tempo for any given piece of music is a matter of personal taste.

Here's something important to remember. The tempo of a song can be changed as often as you wish, but these changes will not be recorded. When you load a song, it will have the tempo that was set when it was saved. Tempo is for playing music. Adjust it so that the music sounds good to your ear.

F stands for Faster. **S** stands for Slower. *Songwriter* offers you many different speeds at which you can play your music.

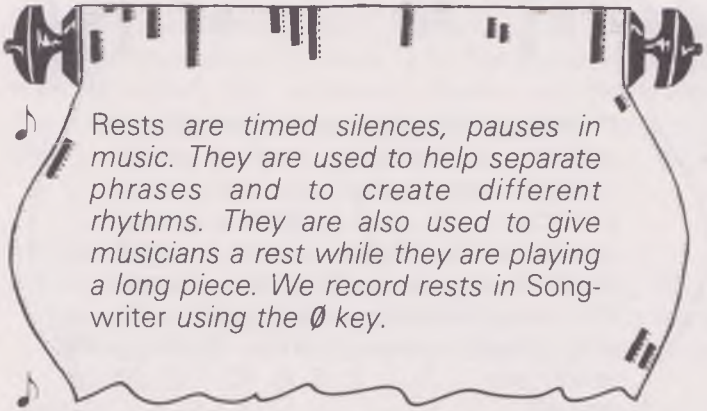
The **F** stands for *Fast*. The **S** stands for *Slow*. The dot moving back and forth is called a *metronome*. The metronome shows the tempo. Pressing the **F** key speeds up the tempo; pressing the **S** key slows it down. You can choose many different speeds at which to play your music. When you can't go any faster or slower, you will hear a click.

You can move to the slowest and fastest tempos with just two keystrokes. Press **ESC** then the **S** key. The metronome will move at the slowest speed. Now press **ESC** and then **F**. This will cause the tempo to jump to its fastest speed. But remember this: **ESC S** and **ESC F** cannot be used while a song is playing.

Try playing some of the *Songwriter* songs or your own songs at different tempos. Practice with adjusting the tempo while a song is playing or while you are writing a song.

NOTE DURATIONS

Notes can be many different lengths. The longer a note, the more time it will be heard. The shorter a note, the less time it will be heard.

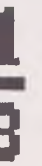


Rests *are timed silences, pauses in music. They are used to help separate phrases and to create different rhythms. They are also used to give musicians a rest while they are playing a long piece. We record rests in* Songwriter *using the Ø key.*

Rests help separate phrases and create a sense of rhythm.

In *Songwriter*, the length of the note being played is shown on the fraction bar on the left side of the screen and indicated by the fraction listed below the bar.

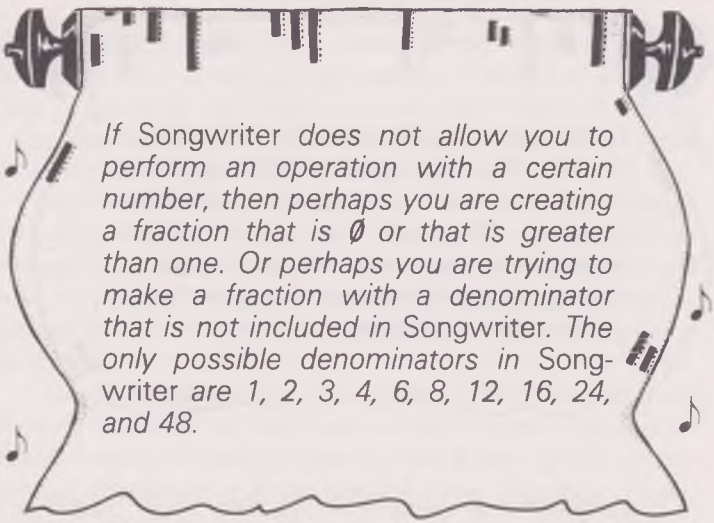
A CLOSEUP LOOK AT THE FRACTION BAR



It will be easier for you to understand how note lengths work in *Songwriter* if you look at *Songwriter* as you read this. To get started, you need to return to the opening *Songwriter* screen. If you have anything in the internal memory of your computer at this moment, save it (if you want to), then press **G** and select the START NEW SONG option on the menu.

The fraction is 1/8 and the "stepladder," or fraction bar, on the left of the scale is divided into eight parts, with one part "filled in." The note in the scale is an eighth note. You can change this note by simply pressing a number key. Try all the number keys to see what happens.

Pressing the number keys (except Ø) will change the top part of the fraction. Try it!



If Songwriter *does not allow you to perform an operation with a certain number, then perhaps you are creating a fraction that is Ø or that is greater than one. Or perhaps you are trying to make a fraction with a denominator that is not included in* Songwriter. *The only possible denominators in* Songwriter *are 1, 2, 3, 4, 6, 8, 12, 16, 24, and 48.*

Did you notice that pressing the **9** key had no effect? That's because pressing a number key changes the fraction's numerator (top half), and in *Songwriter* you can't create a fraction (such as 9/8) that is larger than 1.

The smaller the fraction, the shorter the duration of the note.

Though *Songwriter* begins with eighth notes because they are common in music, you can change this. Go back now to 1/8. Press the **/** key and the **2**. What happens? You should see 1/16 below the fraction bar. You divided 1/8 by 2. Each of the parts was divided in half, so now there are sixteen parts.

Now change the numerator by pressing a number. This time 9 works. But to go higher than 9/16, you will need to use the **+** key. Press **+** then **4**. Your fraction is now 13/16. The fraction bar has sixteen parts, and thirteen are filled in. Now subtract 9.

The denominator (bottom number) is the number of parts the fraction bar is broken into. The numerator is the number of parts that are filled in. Remember, the smaller the fraction, the shorter the length of time the note will play.

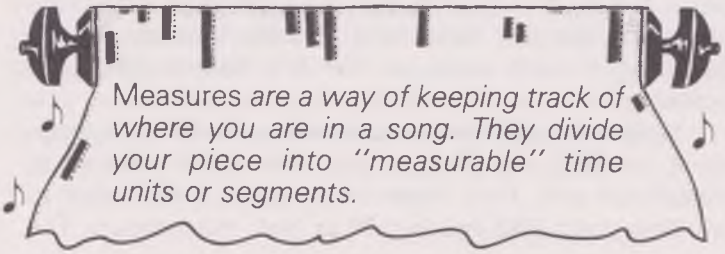
ACTIVITIES

- ☞ Load the song named NOTE LENGTHS and play it.
- ☞ Practice with the fraction bar, going from very short notes to very long ones and recording your notes along the way. Add rests in between, where you feel they "work."
- ☞ Write a short phrase using seven notes that are all of the same length. Add a rest. Now, using those same seven notes, change the note lengths. Try different combinations until you have found one you really like. Save it on a disk.

BEATS AND METERS

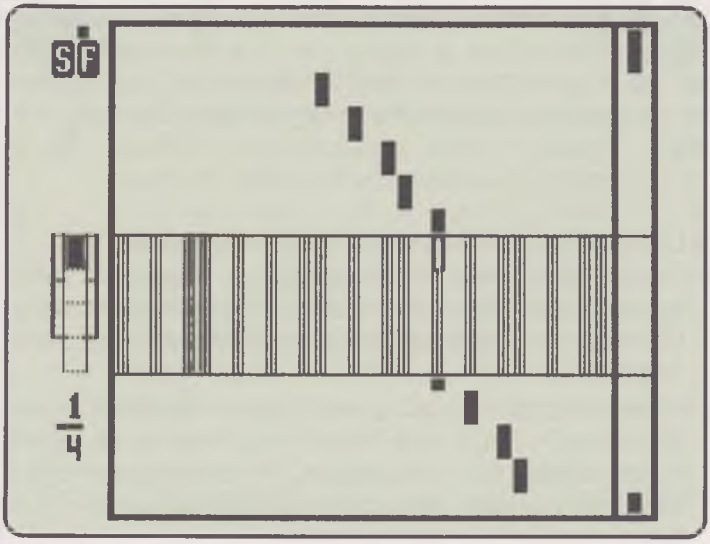
Musical pieces display a variety of rhythms. Musicians who tap their feet while playing their instruments are tapping out the beat. If you have ever swayed, clapped your hands, or snapped your fingers to a song, you were marking off the measures. Each represents a unit of time.

Meter refers to an orderly pattern of beats. Measures help you visualize musical patterns. They divide your song into manageable units.



Measures *are a way of keeping track of where you are in a song. They divide your piece into "measurable" time units or segments.*

Pressing **ESC** and **M** "sets" the measure. Pressing the **M** key alone "resets" the measure.



The measure markers

A measure in three-fourths time lasts for the length of a three-quarters note. Together the notes in the measure must add up to 3/4, and the measure will have three beats to it. Though the measures in a song need not all be the same length, they usually stay fairly constant. Musicians often play the first beat more strongly to mark out the beginning of each measure. The first beat is called the *downbeat*.

Songwriter enables you to set measures for your songs using the **ESC** and **M** keys. Let's use a 3/4 measure to experiment with. First, make the length of a note equal to 3/4. Now press **ESC** and then **M** to "set" the measure. The

brackets on the sides of the fraction bar show the length of the measure. Record nine notes, 1/4 length each. Watch the fraction bar change as you do this.

As you record a new note, the markers along the sides of the fraction bar will move up until the measure is "full"; then they will return to the starting place. Pressing **M** resets those markers to the beginning of the measure.

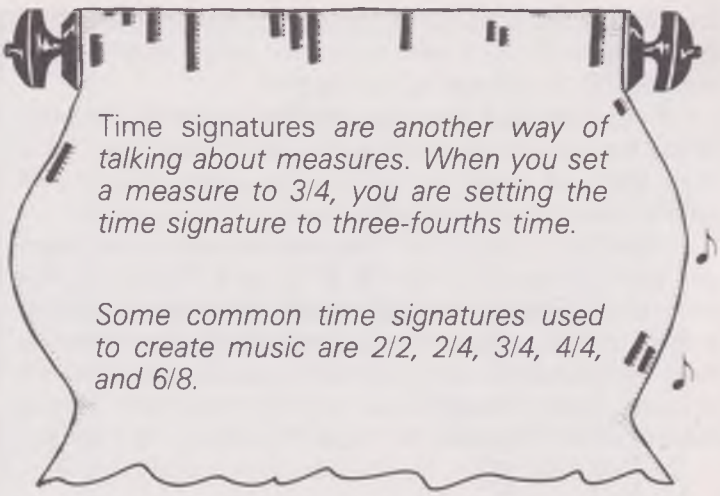
How can this help you? The measure marker will show you exactly how much time is left in your measure at any given point. This can help you decide, when you are writing a melody, how long your next note should be. When you have written something that doesn't sound quite right, one or more of your notes may be too long or too short. Setting measures will help you find these "incorrect" note values.

Setting measures may help you set proper note values.

TIME SIGNATURES

A *beat* is a regular pulse, like the ticking of a clock. Each beat in a measure marks the passing of a certain measurable length of time. In 3/4 time, there are three beats to a measure, with the 1/4 note receiving the beat. Within the measure there may be individual notes of longer or shorter length, but the 1/4 note is the unit of beat, the "pacesetter."

You can figure out the time signature of any song by tapping your toe or clapping your hands at an even pace as you listen to the song. Some songs will cause you to tap faster, some slower. Note the pattern of recurring taps. Each tap is one beat, and each group of beats is a measure.



Time signatures *are another way of talking about measures. When you set a measure to 3/4, you are setting the time signature to three-fourths time.*

Some common time signatures used to create music are 2/2, 2/4, 3/4, 4/4, and 6/8.

MORE ACTIVITIES

Try changing time in the middle of a song you write. Start at 4/4 time, then switch to 3/4.

- ☞ Set the length of your measure to 3/4. Now set your note length to 1/16. How many notes does it take to fill up a measure?
- ☞ Create a rhythm that repeats itself every measure.
- ☞ Record a song in 3/4 time, then one in 4/4 time, then one in 7/8 time. Play them all and compare.
- ☞ Write a short song using eight notes. Set the length of the measure to 3/4. Now go through the song and add more notes so that each note of the original song becomes the first note of the new measure. When you play your song, do you still hear the original melody?
- ☞ Listen to the song WHAT TIME IS IT? on the *Songwriter* disk. Can you figure out what the time signature is? Try setting it to see if you guessed right.

A FINAL LOOK

Here, again, are the commands introduced in this chapter:

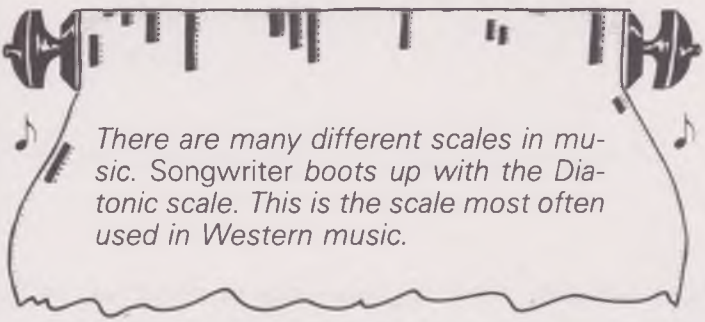
♪ Press **F** to make your song go faster, **S** to slow it down.
♪ Press **ESC F** and **ESC S** to go instantly to the fastest and slowest speeds.
♪ Press an arithmetic key (**+**, **−**, **/**, or *****) and/or a number key (**1** to **9**) to change the length of notes.
♪ Press **ESC** and **M** to set measures.
♪ Press **M** to start a new measure.

CHAPTER IV. Scales and Tones

A scale is an orderly arrangement of musical tones.

The pattern of sounds we use when we write music is called a *scale*. A scale arranges sounds, or tones, by pitch from low to high. A low tone sounds rumbly. A high tone sounds squeaky.

The pattern of tones in a scale rises in a series of steps. Steps with black stripes between them are called *whole steps* or *whole tones*. Steps with no black stripes between them are called *half-steps*, or *semitones*. The pattern of half-and whole steps in a scale repeats itself.



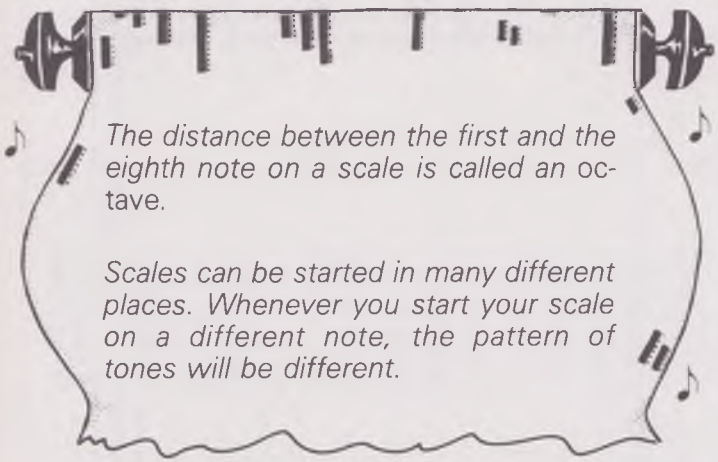
There are many different scales in music. Songwriter *boots up with the Diatonic scale. This is the scale most often used in Western music.*

There are eight whole tones in the scale *Songwriter* begins with. The first and eighth tone are really the same sound but are at a different pitch.

Pressing the > and < keys moves you a half-step up or down the scale.

You move up and down the scale using the left and right cursor keys. You add the semitones by pressing the < and > keys. These move your note up and down the scale in half-steps.

The scale that *Songwriter* starts with is a *major scale*. Its pattern is always a whole step, whole step, half-step, whole step, whole step, whole step, half-step.



The distance between the first and the eighth note on a scale is called an octave.

Scales can be started in many different places. Whenever you start your scale on a different note, the pattern of tones will be different.

NAMING NOTES

Press **G** and select the NAME NOTES option to turn on the note name display.

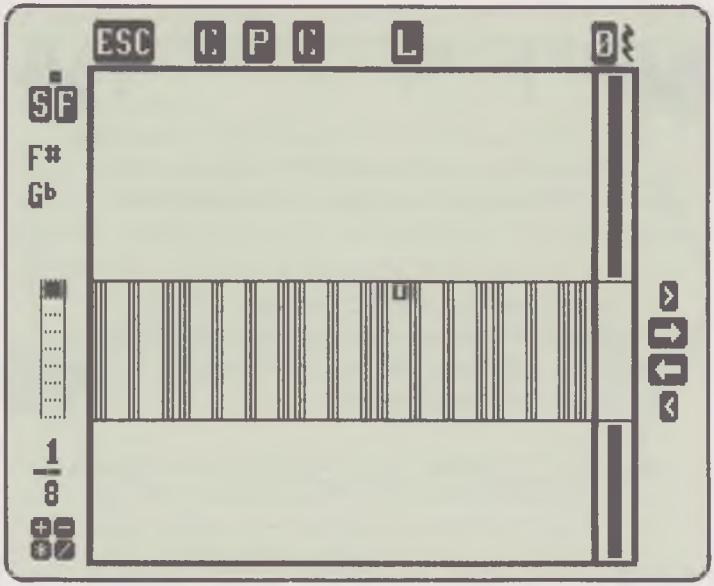
Press **G** and highlight the NAME NOTES option on the menu. Press the **SPACEBAR** or the **RETURN** key. This turns on the display of the note names.

Notes have names using the letters A through G. The same notes an octave apart have the same letter.

There are twelve different notes on the scale but only seven letters. The seven letters are for the seven major whole tones. The five remaining notes use the same letters as the notes of the whole tones but have a "♯" or a "♭" added to them. ♭ is the symbol for *flat*. A sharp is a half-step to the right, a flat is a half-step to the left. Thus, F♯ means a half-step to the right of F, and G♭ means a half-step to the left of G.

Sharps and flats are formed from half-steps to the right or left of a tone.

Check out the names of notes by moving up and down the scale and watching the display.



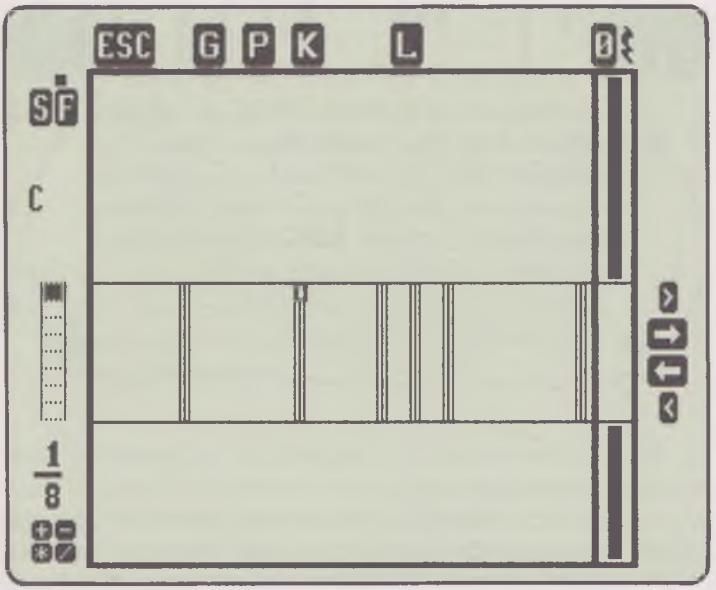
Note names displayed on the screen

KEYS

On many musical instruments it is hard to change the scale that you use. But *Songwriter* makes it easy for you to change scales—the pattern of notes—and to work with that new scale as if it were built in. You simply press **ESC**. The cursor keys now move the scale instead of the note. When you shift the scale like this, you are changing the *key*. The key of C means the scale begins on the note C; the key of F means the scale begins on F.

Pressing **ESC**, then the left or right cursor key changes the scale.

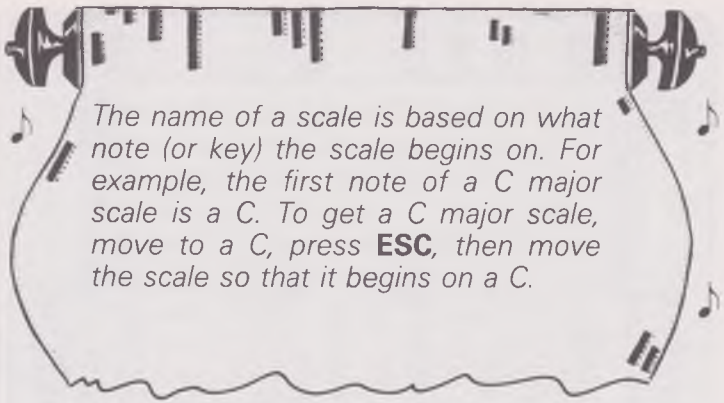
Try it. First move the note back to the beginning of a major scale (the left side of an orange stripe on a color TV



Shifting scales on *Songwriter*

or monitor or the light notes on a black-and-white TV or monochrome monitor). Press **ESC**, then move the left or right cursor key to shift the scale.

If you had a song in memory, it temporarily disappeared from the screen when you pressed **ESC**. Pressing **ESC** after you finish shifting the scale will bring your song back—with the notes still in exactly the same place. The notes do not change when you change keys. Only the pattern of notes changes. However, when you add new notes, notes that weren't in the scale before may appear.



The name of a scale is based on what note (or key) the scale begins on. For example, the first note of a C major scale is a C. To get a C major scale, move to a C, press **ESC**, *then move the scale so that it begins on a C.*

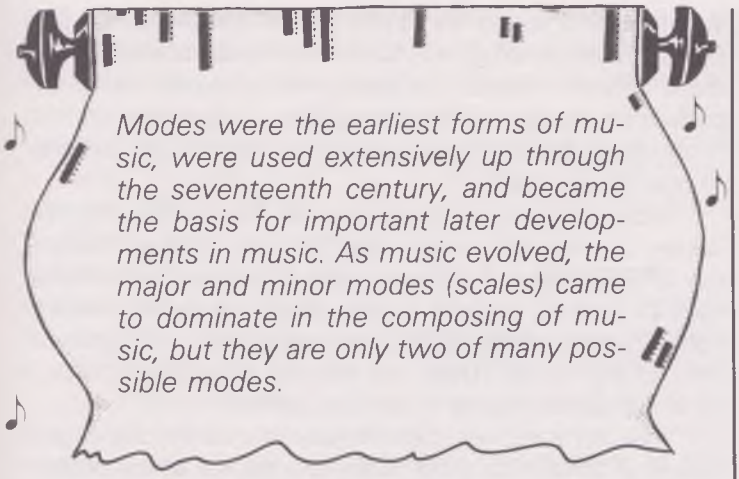
Record the notes in a major scale. Change key and record a major scale again. Do this over and over. If you want a shortcut, press **L**, record the scale as you did before, then press **Q**. Now shift the key. Move to the start of the scale and press **Q**. Do this many times. (To learn more about **L**, see the next chapter.) Now play your scales, each of which is in a different key.

MODES

Modes are a group of scales formed from a single scale. Only the note on which the scale begins changes.

Modes are scale formations. If you keep a scale in the same place but record it from a different starting spot, you have changed modes.

Press **G** and start a new song. The note will be at the first position of a major scale. Move down the scale two notes. Record a scale starting at this note. Stop when you are an octave (eight notes) above the first note. Play the scale. What you are hearing is a *minor scale*. Remember, the pattern of half- and whole steps in a minor scale is



Modes were the earliest forms of music, were used extensively up through the seventeenth century, and became the basis for important later developments in music. As music evolved, the major and minor modes (scales) came to dominate in the composing of music, but they are only two of many possible modes.

different from the pattern in a major scale.

Now move the note to the beginning of a major scale. Record a major scale. Move the note back to the beginning of the major scale and "shift" the scale three steps to the right. Play a scale starting from where you are. This major and minor scale start on the same note.

Try recording many different modes. You can change the scale by using the **ESC** key and the left and right cursor keys. Can you find all seven modes?

DESIGNING YOUR OWN SCALES

What would it sound like to play on only the black keys of a piano? What would music sound like if your scale had only three different notes? You can construct scales using any pattern or number of notes you like. A scale can contain from one to twelve notes, and notes can be one half-step to one octave apart.

Move to the beginning of a scale. Press **ESC**, then the **X** key. This will remove the note from the pattern. Pressing the **SPACEBAR** will add the note. Now use the half-step keys (> and <) to move up and down the pattern, adding notes using the **SPACEBAR**, removing them by using the **X** key. (Using the **RETURN** key will still allow you to hear a note without recording it, as it did before.)

You can make the pattern you set up in one octave repeat all across the scale. Make the pattern at the bottom (left side) of the scale and press the left cursor key until the new pattern fills the entire scale. Now press **ESC** to begin writing a song on your new scale.

SAVING SCALES

It is a simple matter to save scales. Just save them along with your song. If you want to save a scale alone, then save it under SAVE SONG without any notes in it.

ACTIVITIES

☞ Take out all of the notes in a normal scale and put in all the notes that are not normally in the scale (the black notes). You will have created a Pentatonic scale. The Pentatonic scale, with only five notes, is particularly good for children because any combination of notes using it sounds good. You can also load PENTATONIC from your *Songwriter* disk to see what this scale looks like and to use it for writing your own songs.

☞ Try writing songs in different keys.

☞ Load the scale called MYSTERY from your *Songwriter* disk. This scale may be familiar to movie-goers. Record a starting note. Move up one note and record. Move down two notes and record. Move down two more notes and record. Move up one note and record. Now play your song. You can change the length of the notes or their order. To go back to the Diatonic scale, just load any song written in it from the *Songwriter* disk.

A FINAL REVIEW

There are a number of new commands and options in this chapter. They are:

♪ Use the > and < keys to move up and down the scale a half a step at a time.

♪ Use the NAME NOTES option to see the names of the notes as you write or play a song.

♪ Press **ESC**, then move right or left on the scale to shift the scale you are using to write music with. Then, press the **SPACEBAR** to add a new note to the scale, the **X** key to delete a note from the scale.

CHAPTER V. Musical Ideas

Songwriter can learn new commands!

Imagine being able to press one key and have the computer record a complete melody on the screen! Or imagine having a key that automatically changes a half note in your song to a quarter note, or even to four different eighth notes! This capacity is built into *Songwriter.* It is not just to help those of us who are lazy. The ability of the program to learn new commands enables us to stretch our creativity and our ability to compose and edit music.

The L and lightbulb displayed on the *Songwriter* screen

You might want to use START NEW SONG before you begin. To make *Songwriter* learn a new command, press **L** for *Learn.* You will see either a lightbulb come on or the L start to flash. Now, every command you give will be recorded and remembered by *Songwriter.* When you are finished recording a short melody or a change you want repeated, press a key not already used by *Songwriter.* Then press the **L** key again. The lightbulb will turn off or the L will stop blinking, and the key you pressed will have become a new *Songwriter* command.

Press **L** to instruct the computer to learn a new command. A flashing lightbulb or L indicates that *Songwriter* is paying attention.

Motifs are musical ideas, short sequences of notes that are repeated in a song. They may be a melody or a refrain or a little jingle. The Learn command in *Songwriter* makes motifs easy to create and use. Create a motif right now, even if it is just a few notes long. Press **L,** then record the notes in the motif. Now press a single key to give that command a "name." Remember to use one that *Songwriter* has not used—the top row of letters, except P (Q, W, E, R, T, Y, U, I, O), are good ones to choose from.

The "idea keys" you create are simply sequences of keys pressed automatically. Whenever and wherever you press an idea key, *Songwriter* automatically goes through the sequence.

You can create an idea key that transposes. *Transposing moves a song to a new key. To transpose you have to move each note that was recorded the same distance to the right or left. Here's how you do it. Play a note by scrolling up, erase the note using* **X,** *and then transpose the note by moving it using the* > *and* < *keys. Record the note with the* **SPACEBAR.** *If you record this sequence as an idea key, you can use it to transpose your entire piece. Suggestion: Skip over rests in your piece by scrolling up when you get to them.*

There is room in the computer's memory to create nine different "idea keys," that is, teach *Songwriter* nine new commands that will initiate nine different musical sequences. And each idea can include over a hundred keystrokes. If you hear a click or beep when you press any key, then the available space in that particular idea key is filled up. Press an unused key to store it.

You can create nine different musical idea keys with *Songwriter*.

What happens if you make a mistake while you are creating your idea? No problem. Just press the **L** key to stop it and the **L** again to start over.

Press **L** twice to start over.

You can easily add an old musical idea to a new one. Just press the key for the old idea as part of the sequence of creating the new one. All of the steps in the old idea will be added to the new one.

You can also use an idea key to make it easier to edit songs. Remember, the order for editing is *play, erase, change, and record*. Just create an idea key that starts with the scrolling-up key and an **X** and ends with a **SPACEBAR.** In between, you can put the changes you want.

EDITING MUSICAL IDEAS

Press **K** for Keyboard to change or edit a musical idea.

Suppose you want to change a musical idea you've created. How do you do this?

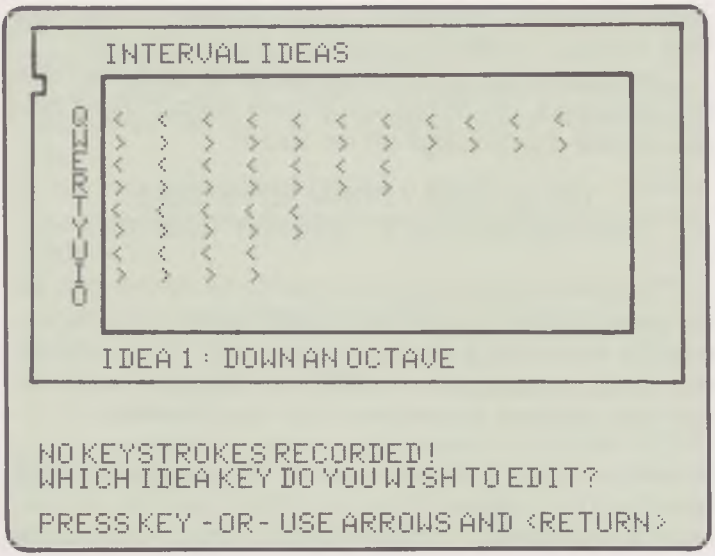
Press **K** for *Keyboard*. You will see a list of all your saved musical idea keys.

Every *Songwriter* command has its own symbol on the "idea screen." The **SPACEBAR** is shown as an underline (_). The black square can be used to select the idea to be edited. Move it using the cursor keys. Press **RETURN** to select the one you want. You can also choose a musical idea by pressing the letter you assigned to it.

At this point, you will be able to edit your idea in a number of ways. For example, you can change the letter of the key that commands it. Press **RETURN** to leave it as it was or type a new letter. If you hear a click when choosing a new command key, it means that the key you have chosen is already taken. Pick a different key or give the idea a name so that you will remember what it does.

Edit musical ideas using your computer's **DELETE** key (or the **D** command in some computers).

After you give the idea a name, the lower part of the screen will show a description of the last eleven or twelve keystrokes in your musical idea. Using **D** for *Delete* (the **DELETE** key on some computers), you can erase steps


INTERVAL IDEAS
QWERTYUIO
IDEA 1 : DOWN AN OCTAVE
NO KEYSTROKES RECORDED!
WHICH IDEA KEY DO YOU WISH TO EDIT?
PRESS KEY -OR- USE ARROWS AND <RETURN>

Example of an "idea screen" from the *Songwriter* disk

from the idea. You can also add commands. Try it with the idea you created earlier.

Though you can create whole new musical ideas using this procedure, you cannot use one idea as part of another. For this, you must use the **L** key, as explained earlier.

When you have finished with your editing, press the **RETURN** key. This will return you to your song. The **ESC** key cannot be used here to return you to the music screen because it can be part of a learned command.

ERASING OLD IDEAS

There is room in memory to hold only nine musical idea keys at once. To add one, you must erase an old one.

The easiest way to do this is to create your new idea key using the **L** key. When you choose the command key, you will see this message on the screen:

THERE IS ONLY ROOM FOR 9 IDEAS
WHICH IDEA KEY DO YOU WANT TO ERASE?

Then the screen will tell you how to select the idea. All the musical idea keys will be listed. Choose the one you want to erase and proceed as instructed. If you change your mind, simply press the **ESC** key. Beware, however, that this will erase your newest idea from memory.

ADDING MUSICAL IDEAS TO YOUR LIBRARY

You LOAD and SAVE IDEAS the same way you LOAD and SAVE SONGS—using the Get menu. Choosing the EMPTY load file will erase all your ideas at once.

Should you want to expand beyond the nine musical idea keys that the computer's memory allows, you can! All you need is an initialized (formatted) disk, and it can be the same one your songs are on.

Earlier we explained how to make an initialized disk. Turn to that section now if you need to refresh your memory.

Songwriter will save and load ideas from this disk the same way it saves and loads songs. Simply choose the SAVE IDEAS or LOAD IDEAS option on the Get menu. All nine ideas are save together. Should you want to erase all your ideas at once, simply choose the LOAD IDEAS option and then the EMPTY idea file.

Ideas and songs can have the same name. *Songwriter* will keep track of which is which for you. When creating an idea you think you might want to use in a song, give it the same name as the song. That way, it will be easier for you to remember later which ideas go with which song.

☞ The *Songwriter* disk comes with files of musical ideas. Use the **K** key to see their names and the "names" used to call them up. Try loading and playing some of them. They may help you in working out your own musical ideas.

☞ Load the file called MYSTERY MOTIF. Then create a song by using the *Songwriter* idea keys in the following order:

QW ERERTTTY ERERTTTY U

ACTIVITIES

With the *Songwriter* disk in the drive, press **K** to see the musical ideas stored on the *Songwriter* disk.

LET'S REVIEW

There were a lot of important commands introduced in this chapter. These were:

♪ Press the **L** key to teach *Songwriter* a new command.
♪ Choose a key from the keyboard not already being used to name and end a musical idea you want to save.
♪ Press **K** to see a list of the musical ideas you have created.
♪ Use the **D** command or the **DELETE** key to edit musical ideas.
♪ Save and load ideas the same as you save and load songs, using the Get menu.

CHAPTER VI. Error Messages

There are two forms of error messages. The simpler message is the short click you hear when you tell *Songwriter* to do something it cannot do. You will also get a click if you are out of memory and you press the **SPACEBAR**, or if you try to increase or decrease the tempo when a song is playing and *Songwriter* cannot go any faster or slower. You will also hear a click, but *Songwriter* will still do what you ask, if you run out of space when you are creating a musical idea. Do not ignore this click, for whatever you type after it will not be saved.

The other type of error message is a beep, followed by a short message and the phrase PRESS ANY KEY. This type of error is a disk error and only happens with GET options. See the following pages for a list of the disk errors you might encounter and what to do about them.

There is no room for new files on this disk. See DISK FULL.	**DIRECTORY FULL**
This is an I/O type of error. See I/O ERRORS below.	**DISK ERROR**
There is no more space to save any type of file on the disk. Save the song or musical idea on another disk. There may still be room on the disk for a shorter song, though. See DISK FULL OF SONGS below.	**DISK FULL**
There is room for only a certain number of song files and idea files on the disk. If your disk is full, you can: 1. Save the song or idea on another disk as long as the new disk is properly initialized. 2. Save the song or idea using a name that is already on the disk. Because this will erase your old song file, don't use the name of any song you want to keep!	**DISK FULL OF IDEAS OR DISK FULL OF SONGS**
Songwriter cannot find your disk drive. Either it is not turned on or it is not properly connected.	**DRIVE NOT CONNECTED**
Locked files cannot be changed while *Songwriter* is running. Use a different name. To unlock a file quit *Songwriter* and follow the instructions for unlocking files in your disk drive manual.	**FILE LOCKED**
If *Songwriter* cannot find a file on the disk because you changed disks after you chose the GET option to load a song or a musical idea, then you will get this message. Either finish loading from the original disk or press **ESC** and start the process again.	**FILE NOT FOUND OR FILE TYPE MISMATCH**

I/O ERROR

I/O stands for input/output. An input/output error happens whenever the disk drive cannot read the disk. This may happen because:

- You tried to save a song on the write-protected *Songwriter* disk.
- There is no disk in the drive.
- The disk is in upside-down.
- The door to the drive is open.
- The disk has not been initialized (formatted) properly.
- The disk is defective.
- The disk drive is damaged.
- You are trying to initialize a disk with a write-protect tab on it.
- The computer is looking for a printer routine and there is none. This is probably because the *Songwriter* disk is not in the drive.

NOT A SONGWRITER FILE

This message may appear if you try to load a file that was not created by *Songwriter*.

OUT OF MEMORY

You will get this if you try to add a song that is longer than the amount of memory remaining in the computer. See your machine-specific guide for the number of notes your computer's memory can hold.

WRITE-PROTECTED

This error occurs when the write-protect slot on the disk is covered up. Either remove the tab covering the slot or use another disk.

CHAPTER VII. You're On Your Own!

You are now a *Songwriter* graduate. If you have tried all the commands and done some of the suggested activities, you are certainly ready to go off on your own and begin composing some very sophisticated melodies.

Here's one last suggested project. Make it your masterpiece!

Write a short, simple melody. Save the melody on disk. Add the melody to the song several times. Create a musical idea that changes a note into a pattern of notes, for example, *play next note, erase note, set note length to 2, record note, move note up a half-step, set note length to 1, record note, move note down a half-step, record note*. Make up different patterns to change each section that you add (each should start with *play next note, erase note*). Make any other changes you want to the melodies. The original melody is called a *theme*. The sections that you change are called *variations*.

Good luck!

You can easily create many variations on a single theme using *Songwriter*. Try it!

GLOSSARY Musical Terms

Below are brief definitions of most of the musical concepts discussed in this manual. For fuller explanations, check the index for the pages on which these concepts are discussed or look them up in a musical dictionary.

BEAT A musical pulse. The beat divides musical tones into equal units and establishes a pace for the song. A clock, for example, ticks to a regular beat.

CHROMATIC SCALE A scale made up entirely of half-steps, or semitones.

DIATONIC SCALE The scale used for the creation of most Western music. Consists of major and minor scales and contains eight tones.

FLAT A symbol (♭) that frequently appears after note names. It means to play a note one half-step lower (one tone to the left) than normal.

HALF-STEP The interval between two adjacent tones. Intervals are normally measured in terms of half and whole steps.

INTERVAL The distance between any two notes. Normally measured in terms of half and whole steps.

KEY The type of scale used in a piece of music. The key determines what notes are to be played as sharps and flats.

MAJOR SCALE A scale having this pattern of steps: whole, whole, half, whole, whole, whole, half. A major scale may begin on any note so long as the specific pattern is continued.

A length of time in music designated by a specific number of beats. Measures make it easier to keep track of where you are while playing or writing music.	**MEASURE**
An electrical or spring-wound mechanism that marks the tempo (speed) at which music is played. Like a clock, it produces a certain number of beats per minute. However, the metronome can be adjusted to play the music faster or slower.	**METRONOME**
A scale having this pattern of steps: whole, half, whole, whole, half, whole, whole. A minor scale is created by beginning the scale three steps to the left of the related major scale.	**MINOR SCALE**
The different scales formed from starting on different notes in a major scale.	**MODES**
A repetitive musical idea used to build a piece of music.	**MOTIF**
The written representation of a single musical tone.	**NOTE**
The distance between the first note and the eighth note on a scale (twelve half-steps). The first and eighth note have the same letter designation but are at different pitches.	**OCTAVE**
A scale with only five different tones.	**PENTATONIC SCALE**
A small group of notes that expresses a musical idea. Phrases can be organized into larger units to form sections of long musical pieces.	**PHRASE**

PITCH	The highness or lowness of a sound. A tuba makes sounds that are at a low pitch, while a flute produces sounds at a high pitch.
REST	A pause in music, a moment of silence. Rests, like notes, may be of different lengths.
RHYTHM	Rhythm refers to the use of time in a musical piece. The length of notes, the tempo, and other factors go into making up the patterns in music we recognize as rhythm.
SCALE	A series of tones used in a piece of music, arranged according to a pattern of rising and falling pitch. Scales are used for writing songs and composing music.
SEMITONE	Also known as a halftone or half-step, the interval between any two adjoining notes.
SHARP	A symbol (♯) sometimes placed after note names in written music. It means to raise or play the note one half-step higher.
TEMPO	Refers to the speed of the beat in a particular song.
TIME SIGNATURE	A way of writing the beat pattern of a piece of music. Time signatures are written as two numbers, one above the other, such as 6/8 or 4/4. The top number indicates the number of beats in each measure; the bottom number indicates the type of note to receive the beat.
TRANSPOSITION	Changing the key of a particular song.
WHOLE STEP	An interval containing two half-steps.

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